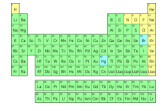




Bundle 4 Review: The Physical Properties of Matter



OBJECTIVES

- I can compare and contrast metals, non-metals and metalloids.
- I can calculate density to determine the identity of an unknown.
- I can detect the physical properties of minerals, including hardness, color, luster and streak

Questions to Consider

- What physical properties can be used to distinguish between metals, non-metals and metalloids?
- How can density be used by scientists?
- How can physical properties be used to identify minerals?

The periodic table is color-coded: Metals are in grey, Nonmetals are in yellow, and Metalloids are in blue. The groups are labeled 1A, 2A, 3A, 4A, 5A, 6A, 7A, and 8A. The Lanthanides and Actinides series are shown at the bottom.

Metals	Non-Metals
Good conductors of heat and electricity	Poor conductors of heat & electricity
Malleable: can be beaten into thin sheets	Brittle: if solid
Ductile: can be stretched into wire	Non-ductile
Possess metallic luster	Do not possess metallic luster
Solid at room temperature (except Hg)	Solids, liquids or gases at room temperature

Physical Properties of Minerals:

cleavage

The tendency of a mineral to break along certain planes to make smooth surfaces.

fracture

The way a mineral breaks when it is not broken along a cleavage plane.

hardness

The ability to resist scratching.

luster

The way light reflects off of the surface of the mineral.

streak

The color of the powder of a mineral.



MOHS SCALE OF HARDNESS	
HARDNESS IN MOHS UNITS	SAMPLE MINERALS
10	Diamond
9	Corundum
8	Topaz
7	Quartz
6	Orthoclase Feldspar
5	Apatite
4	Fluorite
3	Calcite
2	Gypsum
1	Talc

The **metalloids** or semimetals share some of the properties of metals and some of the properties of non-metals.

$$d = m / v$$

Vocabulary

Mass – A measure of the amount of matter in an object.

Volume – The amount of space occupied by an object.

Density – The mass per unit of volume of a material.

Density formula – $d = m / V$; density equals mass divided by volume.

